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ABSTRACT

This document discusses state-designed workshops which have provided training in behavior analysis techniques to parents. Through information gained from bimonthly meetings and frequent monitoring by workshop leaders and graduate students enrolled in the Special Education Area of the University of Vermont, parents have developed and implemented home-based programs for effecting desirable changes in their children's social academic, and self-care behaviors. Following an introduction to reinforcement principles, parents were assisted in defining behaviors, developing simple measurement procedures, recording and graphing data, and applying appropriate consequences to achieve the desired target behaviors. Home management behaviors dealt with have included school tardiness, household chores, fights with siblings, bed-wetting, mealtime problems, reading improvement, thumbsucking and autistic-like behaviors. The four parent workshops implemented since 1971 have successfully demonstrated that participating parents can apply behavior analysis techniques to change behaviors of most children. (Author)

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TRAINING PARENTS IN BEHAVIOR ANALYSIS TECHNIQUES*

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Many behaviors exhibited by school-age children are deemed inappropriate by their teachers and parents and prevent the children from acquiring the skills necessary for productive adulthood. Some of these behaviors manifested in school have been inadvertently developed and maintained at home. Teachers often can cope with these problems as they occur in the classroom but they have little or no control over the home situation which may maintain them. With an effective program in parent training, parents can be taught skills to enable them to remediate many of the problems that occur in the home. This type of professional training program offers direct services to both parents and children and can obviate the needs for expensive and often delayed services sometimes sought through other means. Parents can be taught simple procedures to assist them in dealing with a variety of problems in the home setting.

Since their inception in 1971, parent workshops have continued with funding by the Division of Special Educational and Pupil Personnel Services of the Vermont Department of Education. The workshops, held weekly or semi-weekly in Burlington or adjacent communities, are based on the principles of behavioral theory and behavioral analysis.

Workshops are directed by Dr. Edward M. Hanley and Mrs. Phyllis F. Perelman of the Special Education faculty, College of Education and Social Services, University of Vermont, and staff members include graduate students enrolled in the Consulting Teacher Program of the Special Education Area of the University. The graduate students assist in monitoring the progress of all children served through the participating parents, by maintaining regular contacts with all parents to insure consistent application of the techniques discussed in the workshop sessions.

Parents are taught the basic principles of analysis of behavior and each carries out at least one project with his or her own child at home, collecting graphic data on the target behavior and introducing consequences to change that behavior in the desired direction.

The wide range of home management behaviors dealt with during the past four years has included household chores, bedtime

problems, fights with siblings, thumbsucking, mealtime problems, school tardiness, learning of the alphabet, bed-wetting, reading improvement and reduction of autistic-like behaviors.

Referrals of parents for the first workshop were made by an elementary supervisor, as the nucleus of that group were parents of children enrolled in special education classes. During the next three years, emphasis was shifted to parents of children enrolled in regular courses, with referrals from elementary principals or guidance counselors. This year's referrals have come from the Burlington director of special education, and the parents are equally divided with children in regular and special classes.

Each year follow-up service has also been provided for several parents served in previous workshops.

At the first meeting, the philosophy of the program and plans for its implementation are presented. One thing stressed, as behavior modification is introduced, is that parents must change their behavior if they want to effect changes in their children's behaviors.

Parents are given copies of the book, Improving Your Child's Behavior, by Madeline C. Hunter and Paul V. Carlson, which they are asked to read before the second meeting. The next few sessions are spent discussing behavior modification and the specific types of problems parents may wish to attack to improve their children's behavior. An assignment is given for the parents to list behaviors of their children that they may wish to increase or decrease and based on this list, the parent is asked to select a simple problem and to record the frequency of the occurrence of the behavior, in other words, a baseline measure of the behavior. Parents are urged to start with the simplest of problems (picking up clothes, completing household chores and so forth) so that, by experiencing rapid success with the procedures, they are encouraged to tackle more complex and difficult behaviors.

At this point, a graduate student is assigned to each set of parents, and works with them on a weekly basis in the home to help with their recording system and to insure accuracy of the data. Additional contacts are maintained by frequent telephone

calls and at subsequent workshops sessions.

Parent training is provided mainly through the workshop format, but for a few parents who find it difficult to attend night meetings, an initial conference is held with workshop directors and graduate students, and feedback is provided to the graduate student monitoring the project.

Following establishment of the baseline measures, consequences are introduced, usually based on high-probability behaviors suggested by the parents, and the parents continue to monitor the child's progress to bring about the desired changes. These are some of the data which follow.

After about six or eight sessions, when programs are well underway, new families are invited to join the group.

The sessions are less formal as the graduate students become involved with individual families and much less group discussion is necessary.

Some strengths of the program appear to be the frequent contact with the parents, which maintains data recording at a reliable level, and the fact that with continuous feedback, parents are more apt to follow the procedures and less likely to get discouraged when techniques do not bring about the changes as rapidly as they would like to see them. It also appears that by taking simple problems at first, the success parents achieve generates enthusiasm for them to go on to more difficult problems.

To date, 57 families have participated in the parent workshops program, and data indicate success in changing the behavior of all children whose parents carried out projects. Regrettably, only a small number of parents can be trained in this manner, due to the limited number of available professional personnel. It is hoped that, in the future, parents can become trainers of other parents following participation in the workshop.

STUDY 1

The first study was undertaken in an effort to establish walking behavior in a 20-month old girl with Down's Syndrome. These children typically walk, if at all, by age 4, in comparison to 11-14 months for normal children.

The child was a 20-month old nonwalking girl whose chromosome study indicated Down's Syndrome. Amy would be described as slight in body build, 18½ pounds and 30 inches tall, but otherwise of fairly normal physical development. One of the characteristics of a Down's Syndrome child is poor muscle tone, and because of this, Amy's family had exercised her legs and arms since birth. She received swimming lessons through the summer to involve muscle tone.

Amy's family had walked her many hours holding onto her hands, and she had a walker in which to practice. She was able to pull herself up and walk holding onto a stable object, but when stood up and left unsupported, she would sit immediately. All efforts to coax her to leave the stable object and take an unsupported step were futile.

A doctor's examination that included pelvic and leg x-rays revealed no physical abnormalities that would prevent walking.

The procedures used were adapted from procedures described in the mid-60s by Meyerson, Kerr and Michael - procedures that had been developed and implemented by Brian Jacobsen, Albert Neal and Edward Hanley.

The chairs were placed facing each other with the parents sitting straddling them. At the first session, the chairs were placed 18 inches apart, just room enough for Amy to stand holding onto the chairs and moving from one chair to the other without her having to let go. When Amy was positioned between the chairs, the parent behind her would say, "Amy, come here". If the command was followed, she was reinforced with an edible. If the command was not followed, a reinforcer was not given. The parents alternated giving the command until Amy was effectively making the transfer from one chair to the other.

As soon as this response had been established, the distance between the chairs was gradually increased until Amy had to move from one chair to the other without being able to hold on to either chair. At first she was able to let go of one chair and, standing unsupported, lean over and hold on to the other chair with her other hand. As the distance between the chairs increased, Amy was forced to take unsupported steps between the chairs in order to receive the reinforcer.

The chairs were moved gradually apart during each session. The greatest distance between chairs reached in one session was the starting distance for the next session. The distance between each chair was 70 inches in the final session.

At this point in the procedures, Amy had taken 162 unsupported steps in one session and the chairs were removed. One parent held Amy's hand and the other parent stood facing Amy with the reinforcer in his hand and repeated the command, "Come here, Amy." When Amy let go of one parent's hand and walked unsupported toward the other parent, she was reinforced.

At any time during the entire procedures, if Amy sat down or dropped to her hands and knees and crawled, she was held up and walked back to where she had started from and no reinforcer was given.

The generalization procedures described above were only carried out for three sessions, as the walking behavior at this point generalized to the regular daily mobility pattern.

Each session was seven minutes long. A regular kitchen timer was set for this time at the start of each session. This time was used so that the whole procedure including setting up the chairs and getting out the reinforcer would take no more than ten minutes.

The number of times the child alternated between parents during the seven minutes was recorded with a tally counter by counting the number of times reinforcement was given. The cumulative number of unsupported steps was counted and recorded on a tally counter for the same seven minute period. This was accomplished by one parent counting the reinforcements and the other parent counting the steps. Reliability counts were taken at least every seventh session and were always well within the 90% range.

RESULTS

The results are shown in Figure 1. As can be seen on the graph, Amy took no unsupported steps for the first six sessions but she was making from 12 to 25 transfers during this time. In sessions 7-24, for a total of 126 minutes, Amy took a cumulative number of 1481 unsupported steps.

During the three sessions of generalization, Amy took 500 unsupported steps.

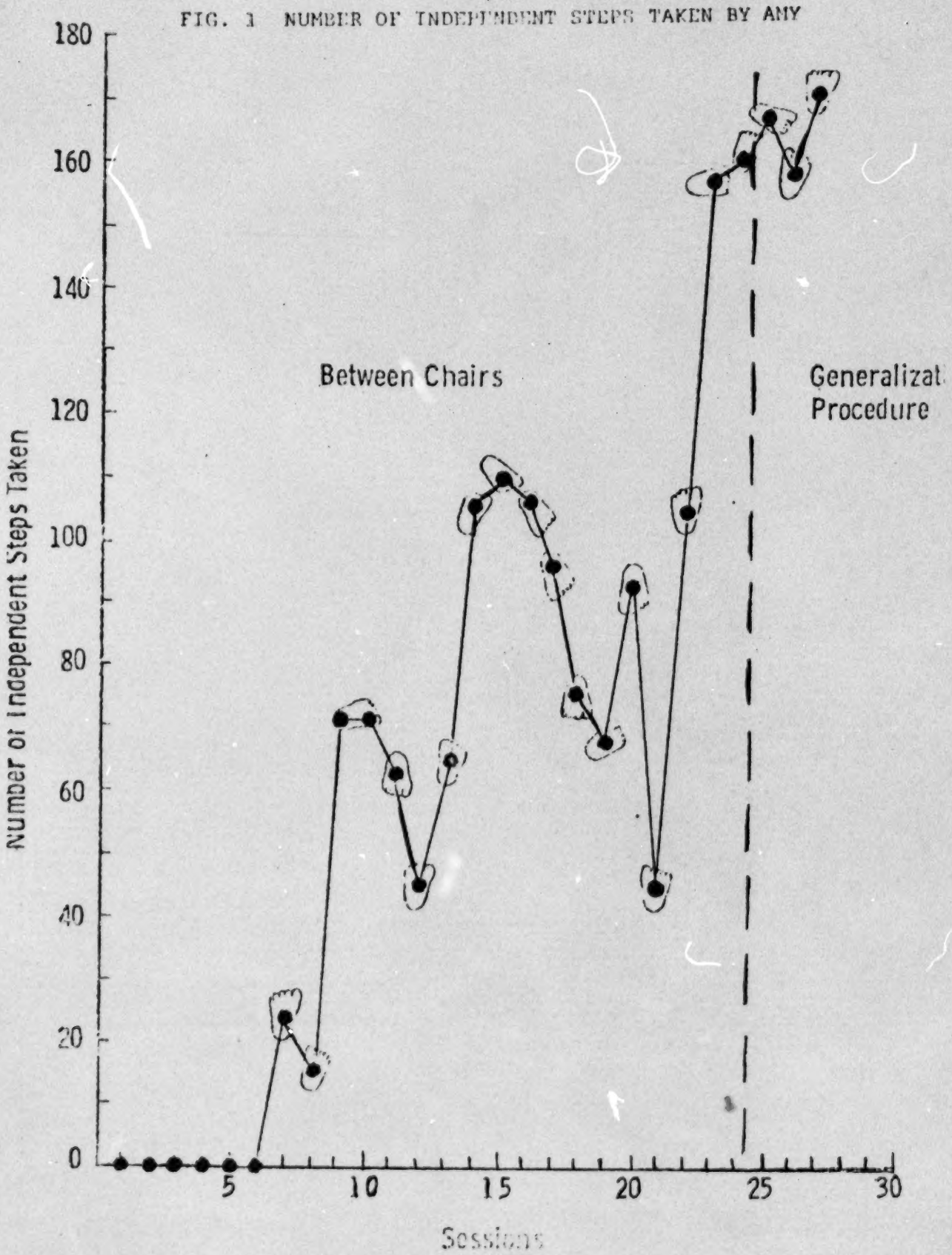
Within one week of the final session, Amy's primary means of locomotion was walking.

This study was a family project done in the child's own home with her parents as the experimenters. The reliability was carried out (with the exception of one session where it was done by adults) by the subject's six and eight-year-old sisters.

One of the reasons for the study was to see if a shaping procedure of this nature is feasible to be used in the home as a developmental approach rather than a rehabilitative procedure, as in the Meyerson, Kerr and Michael (1967) study.

Walking was firmly established with a total expenditure in time of three hours and nine minutes.

FIG. 1 NUMBER OF INDEPENDENT STEPS TAKEN BY AMY



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STUDY 2

Carl was a seven year old boy who lived in a mobile home with six other family members. He was in the second grade at school and a special tutor was assigned to work with him all day. His parents had had to remove him from school during his kindergarten year because of his undesirable behaviors. He had been labeled as autistic and recommended for placement in a local school for emotionally disturbed, but his parents were anxious to avoid that placement.

Carl was referred to the Parent Workshop by his mother and father. Carl's inappropriate, and sometimes violent, arm and hand movements, and weird noises were very distracting and irritating to the other members of the family. Most of all, the parents were concerned because of future implications of this type of behavior.

Carl's mother worked with him for an hour in the evening with the procedures suggested to her through the Parent Workshop Meetings.

Mother's Objective

In the home situation, Carl will exhibit no inappropriate arm and hand movements. Inappropriate behavior was defined as: waving or flapping of hands and/or arms in the air violently and repeatedly. The hand movements were usually accompanied by strange vocalizations. When the arms were down at the sides, it was determined that the response had ended.

Condition A

The mother recorded the number of times Carl emitted the behavior during one hour in the evening. She continued to tell him to stop when he exhibited these behaviors, but other than that no specific procedures were followed.

Condition B

The contingency procedures involved time-out and differential reinforcement of other behaviors (DRO). The session time of one hour remained the same as during Condition A and Carl's mother recorded all instances of hand or arm waving. Because of other duties to which the mother had to attend, six intervals of five minutes each were set as the time for applying consequences for Carl's emission or non-emission of the hand/arm waving behavior. The procedures were described to Carl by his mother and he was told that they were going to play their "game" each day. She set a timer for five minutes, and at the end of five minutes, if Carl had not waved his hands and arms inappropriately, he received a few M&Ms. If he had engaged in inappropriate movements during the five minutes, immediately upon emission of that behavior, he had to sit on his hands for five minutes with no interactions with anyone. The timer was

then set for five minutes. If Carl removed his hands from under him, got up from the chair, and/or made any verbal noises, the timer was set for another five minutes. There had to be five minutes of no hand waving. When the time was up, Carl returned to his own activities and the mother set the occasion for another reinforcement period by setting the timer for another five minute interval.

After six intervals had passed, the mother still recorded incidents of hand waving for the remainder of the hour, but neither positive nor time-out consequences were applied. In other words, DRO only applied during the first half hour. This was done to see if the improvement of the behavior generalized to periods when consequences were not programmed.

In order to insure a constant hour of observation, the observation time was extended an additional five minutes for every time-out instituted.

Reliability measures were obtained in each condition by the oldest daughter or the grandfather. The percentage of agreement ranged from 89% to 100%.

RESULTS

As is seen in Figure 1, during Condition A, Carl emitted the behavior from 2 to 19 times, with an average of nine times per hour.

At the beginning of Condition B, Carl fluctuated between 7 and 0 times, gradually diminishing the behavior until it reached 1 to 0 times. The mean was 2 times per hour.

A return to Condition A, indicated an increase of the behavior from 2 to 15 times per hour in four sessions with a mean of 7 times.

A reinstatement of contingency procedures (Condition B) brought about a range of from 4 times to 0 times with an average of .9 times per hour.

Reports from the school indicated the behavior had also decreased in that setting. There was generalization in the home, too. Carl's mother reported that on several occasions she had seen Carl start to emit the behavior and immediately stop himself, which was a good indication that he was aware of his actions and was trying to correct them.

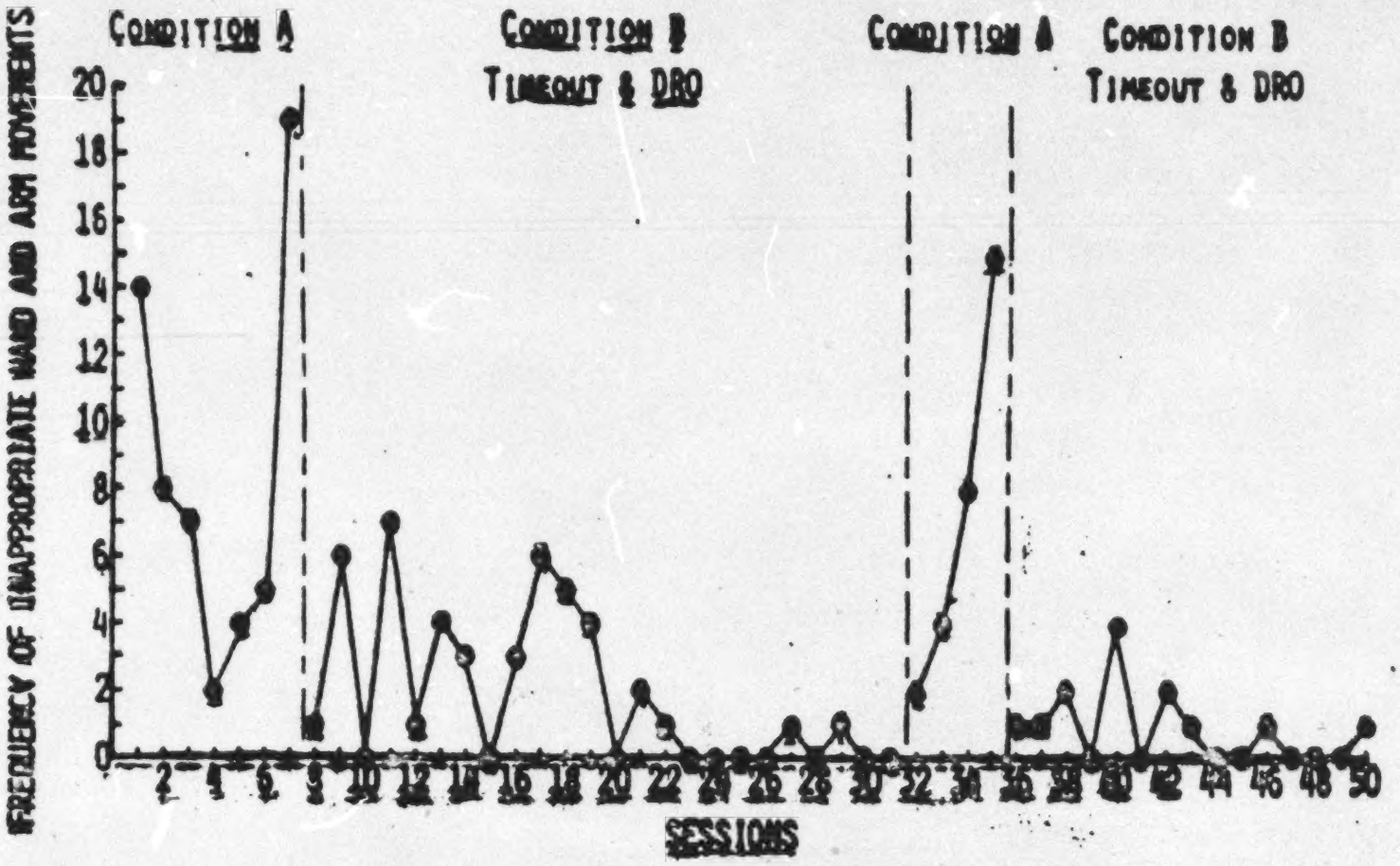

Fig. 1 Record of Carl's inappropriate hand and arm movements